

Patent Abstracts of Japan

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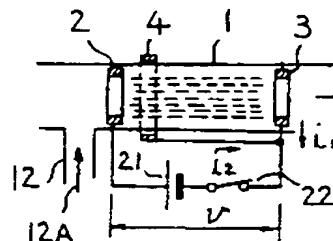
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APPLICANT : HITACHI LTD;

INVENTOR : SUGIYAMA TSUTOMU;

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TITLE : GAS LASER GENERATING DEVICE



ABSTRACT : PURPOSE: To enable an electrical energy necessary for the laser oscillation to decrease by a method wherein an auxiliary electrode is provided to the outside of a discharge tube on one primary electrode side and the auxiliary electrode is connected to the same potential as the other primary electrode.

CONSTITUTION: One primary electrode 2 inside a discharge tube 1 and an auxiliary electrode 4 outside the discharge tube 1 are arranged facing toward each other, and the auxiliary electrode 4 is connected so as to be the same potential as the other primary electrode 3. As a discharge power source voltage V makes the voltage increase drastically before a glow discharge starts, the voltage change with time (dv/dt) is large, but once the discharge starts, the voltage becomes constant, which is a glow discharge voltage, so that dv/dt is made small. The auxiliary electrode 4 is separated from the primary electrodes 2 and 3 by the wall of the discharge tube 1 and the impedance between them is an electrostatic capacitance, wherefore an auxiliary current is supplied only when dv/dt is large. As mentioned above, an auxiliary current is made to flow between the primary electrodes 2 and 3 and the auxiliary electrode 4 when the discharge starts, so that a power consumption is decreased.

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